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HOW SHOULD SECONDARY MATHEMATICS FOR GIRLS DIFFER FROM THAT FOR BOYS?

BY JEAN F. ROBERTSON, M.A.

This topic put in a slightly different way is the question that constantly arises in one form or another—"what is the real value of mathematics to our students and what are we doing to make the high school course of most use to them—*use* in a broad sense." In any high school, be it for girls or for boys, our direct and clear course in teaching mathematics is so to present the subject that it shall stimulate the desire for knowledge for itself that is in the heart of every child, promote self activity and independence of thought, and that it shall enlist in this work the interest and enthusiasm of the child. For, instead of the old idea that interest in a subject takes the backbone out of it, we now feel that knowledge must be infused with interest if it is to reach the heart and work its influence on character.

So instead of taking in geometry, for example, the theorem all worked out in the book as the end and aim of the work and permitting our pupils to memorize the proof, we make the original the important thing from the very first page of the geometry to the last. And who, watching a class as it works out the original in perhaps half a dozen different ways and seeing the light on the faces of the students, can doubt that here assuredly is the consciousness of power following success—the intensified interest of pursuit and the rebound of intellectual pleasure over the problem solved? Here, in the immediate work itself, is all the joy of the explorer, the discoverer, and the inventor. If there is no one royal road to learning perhaps it is because all roads are royal. What though the truth be as old as the hills it is ever new to the child! This is the heart and essence of our work in algebra or geometry and it is the same in either the boys' or the girls' school.

But now, since we are convinced that no work can be made too interesting and, what is equally true, that interest in any subject is awakened and constantly reinforced by an appeal not to

books, but to life, wherever he can, the true teacher will link the subject in hand with the activities of thought, content of real life. Only let him be sure that this extraneous material be adapted to appeal to the child, and be within the range of his comprehension. A forced connection between mathematics and other subjects sheds darkness instead of light often on the work in mathematics. For after all mathematics is the subject being taught and no other. Just *here* in the application then, of mathematical truths to the outside world will come the differentiation between the course in a girls' high school as compared with that in a boys' high school. The boy, by the time he has reached high school is a bit of a mechanic. He knows lots about carpentry, engineering, wireless and constructions of various forms. Problems relating to these subjects he is hungry for. They all add dignity to the book work in mathematics for now, behold! the boy can use his geometry or his algebra in connection with his play or his outside interest. But many of these same problems are to a girl "words, words, words." The terms used, even the names of the parts of the machine, are totally unfamiliar and surely the work in mathematics is not helped but hindered. However if that same girl plays tennis, as she probably does, let her lay out a tennis court and there is at once as much enthusiasm as any boy could evince. Common sense will dictate to any teacher worthy of the name, the outside problems that are "real" to a class, and a saving sense of humor, if nothing else will prevent him from being a slave to a text book, and from offering to a class of boys the same applications offered to a class of girls. Herein lies the difference in the courses. The heart of the work is the same.

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